REMARKS/ARGUMENTS

Submitted herewith is a Amendment correcting the errors in the March 26, 2004 Amendment pointed out by the examiner in the Official Action of May 18, 2004. Entry of this corrected Amendment is requested.

Reconsideration of this application is requested. Claims 1, 2, 5, 9 and 11 remain active in the application subsequent to entry of this Amendment.

Restriction was required and the undersigned elected the subject matter of Group I, namely claims 1, 2, 5, 9 and 11, the only claims remaining in the case. The non-elected claims have been canceled, this action being taken without prejudice to divisional applications directed to the subject matter of these claims.

The claims have been amended in order to more particularly point out and distinctly claim that which applicants regard as their invention. Claim 1 is amended to define a sphericity in the range of 0.1 to 1.4 as disclosed in applicants' specification at page 15, line 16 as well as elsewhere in the description. As a consequence of this amendment the sphericity mentioned in claim 2 has been deleted as unnecessary (already included in claim 1 from which it depends) and the upper value in claim 9 has been adjusted to 1.4.

Claim 5, indicated to be allowable in the Official Action, is revised to incorporate the subject matter of amended claim 1 and thus claim 5 is an independent process claim which is allowable for the reasons already appreciated by the examiner.

Spherical tetragonal barium titanate particles with a perovskite crystal structure of the present invention as defined in the above-amended claims, have an average particle diameter of 0.05 to 0.5 μm, a particle size distribution σg of not less than 0.70, a ratio of Ba to Ti of 0.99:1 to 1.01:1 and a sphericity (maximum diameter/minimum diameter) of 1.0 to 1.4.

The object of this invention is to provide spherical tetragonal barium titanate particles which are free from agglomeration, and can exhibit an excellent dispersibility as

well as a high denseness, high purity and excellent permittivity properties.

More specifically, the spherical tetragonal barium titanate particles of the invention are fine tetragonal particles having a Ba/Ti ratio of 0.99 to 1.01 and, therefore, can exhibit excellent dispersibility and permittivity properties, and are suitable for the production of multi-layered ceramic capacitors having a higher permittivity constant and a lower temperature dependency.

Claims 1, 2, 9 and 11 have attracted a rejection of alleged "obviousness" over the disclosures of Japan 5-330824, Begg et al or Ikawa et al. Applicants respectfully disagree with the examiner's assertions, particularly in light of the claim amendments presented above as well as the attached evidentiary declaration of Mr. Kurokawa made March 12, 2004. The data included in this declaration are discussed in the remarks that follow.

Japanese Patent Application Laid-Open (KOKAI) No.5-330824(1993) discloses a method of subjecting a titanium compound and a barium compound to wet-reaction by adding an aqueous hydrogen peroxide solution thereto. However, the obtained barium titanate particles exhibit a cubic crystal system and, therefore, must be calcined in order to transform them into tetragonal barium titanate particles.

As seen from Mr. Kurokawa's Declaration, the obtained calcined particles were measured by an X-ray diffraction method, and it was confirmed that a peak attributed to a substance other than $BaTiO_3$ (probably $BaTi_3O_7$) was observed. Thus, the obtained calcined particles are not phase particles and, therefore, fail to show excellent permittivity properties.

As seen from the X-ray diffractions, since peaks attributed to substances other than $BaTiQ_3$ are recognized, the obtained particles do not have a single crystal structure.

This evidence also shows that the particles in Experiments 1 to 4 are different from the spherical tetragonal barium titanate particles of the present invention.

Further, as seen from the measured permittivity constant ε, the permittivity constant ε of each of the above dielectric composition obtained from the particles in

Experiments 1 to 4 is lower than that of the dielectric composition produced from the barium titanate obtained in Example 1 of the present invention.

Accordingly, one of ordinary skill in the art cannot forecast spherical tetragonal barium titanate particles with a perovskite crystal structure from Japanese Patent Application Laid-open (KOKAI) 5-330824.

The same holds true for the additionally applied references, Begg et al: "Effect of particle size on the room-temperature crystal structure of barium titanate" pp3186-92, J.Am. Ceram. Soc., 77 3186-92 (1994), as well as Ikawa et al: "Size effect on low temperature phase transformations in BaTiO3 fine powders analyzed by heat capacity" Dept. of App. Chemistry Book 1 pp.447-450.

For the above reasons it is respectfully submitted that claims 1, 2, 5, 9, and 11 define inventive subject matter and are in condition for allowance. Favorable action is solicited. Should the examiner require further information, please contact the undersigned by telephone.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____
Arthur R. Crawford
Reg. No. 25,327

ARC:eaw
1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100